NOTES ON COTULA AND THE DESCRIPTION OF A NEW SPECIES.

By Margaret R. Levyns.

Cotula is a widely distributed Linnaean genus, well represented in South Africa. On the Cape Peninsula seven species have been recorded though *C. bracteolata* E. Mey. ex DC is a somewhat doubtful species and may be an abnormal form of *C. filifolia* Thunb. In this area all the species are heterogamous with stalked, marginal, female flowers, a character common to this genus, Cenia and Otochlamys. These two latter genera are usually accepted as sufficiently distinct from Cotula to warrant generic distinction, but after a careful examination the author has been forced to the conclusion that the line of demarcation is so poorly defined that the case for upholding separate genera cannot be maintained.

Cenia turbinata was first described by Linnaeus as *Cotula turbinata* and was subsequently transferred to Cenia by Persoon. The two features by which this is separated from Cotula are the hollow floral axis and the presence of ray flowers. In several species of Cotula the top of the floral axis is loosely spongy and in a few large specimens of *C. vulgaris* sp. nov. a small but definite hollow was observed. In *Cenia turbinata* the degree of inflation is variable. In the same species the outermost flowers of the capitulum are female, devoid of a corolla and stalked exactly as in Cotula. The outermost row of corolla-bearing flowers has the outer corolla lobe much larger than the other three, and these are the so-called ligulate flowers. It need hardly be emphasised that neither of these characters is a suitable one as a basis for generic distinction and for this reason it is proposed to revert to the old Linnaean name *Cotula turbinata*.

The genus Otochlamys was founded by De Candolle for a peculiar plant which he named *Otochlamys eckloniana*, in which the base of the corolla is prolonged into a flap of tissue wrapping round the ovary like a cloak, suggesting the name. When studying the floral structure of *Cotula pusilla* Thunb., it was found that here the corolla is pouched at the base and folds over the top of the ovary, thus connecting the ordinary type of corolla in Cotula with that of Otochlamys. In the involucre, too, *C. pusilla* bridges the gap as its inner involucral scales are scarious though not quite as conspicuous as those of *Otochlamys eckloniana*.

With *C. pusilla* as a connecting link, it becomes difficult to uphold the genus Otochlamys and for this reason it is proposed to abolish it and institute a new combination **Cotula eckloniana** Levyns.

Two quite distinct plants have been called *Cotula filifolia* Thunb. in South African collections. One is usually larger than the other and was treated by Harvey in the Flora Capensis as a variety which he named *C. filifolia* var. *decumbens*. Without seeing Thunberg's specimens it is impossible to be quite certain which of the two species he described as both grow, often together, in wet spots near Cape Town. Most of the spots answering this description have long since been built over, but Paarden Island still remains, and here both species grow in abundance. However, the probability is that the slightly smaller plant

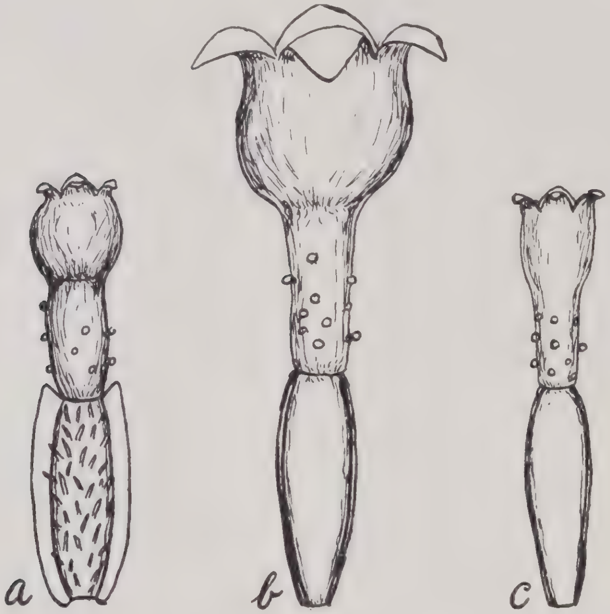

FIG. 1. (*a*) Bisexual flower of *C. filifolia* Thunb. (posterior view). Drawn from living material collected on Paarden Island × 30. (*b*) Bisexual flower of *C. vulgaris* sp. nov. Drawn from living material collected on Kenilworth Racecourse. This plant had a glabrous ovary but forms with a few hairs on the posterior face occurred as well × 30. (*c*) Bisexual flower of *C. filifolia* Thunb. (in the previously accepted sense). Drawn from dried material collected at Melbourne, Australia × 30.

is *C. filifolia* Thunb. and the other an undescribed species for which the name *C. vulgaris* is proposed, as in most parts of the Cape Peninsula it is more common than *C. filifolia*. Harvey's name *decumbens* cannot be used as Persoon had used it for another plant in the genus. Apart from its smaller size *C. filifolia* may be distinguished from *C. vulgaris* by its tubular flowers which have a corolla with small lobes and a definite wing on either side of the ovary (Fig. 1, *a* and *b*). This wing may become much thickened in the fruit. In many specimens of *C. vulgaris* the leaves may be slightly lobed whereas in *C. filifolia* only simple leaves have been observed.

Cotula vulgaris Levyns. (*C. filifolia* Thunb. var. *decumbens* Harv.). Planta annua, glabra. Folia filiformes, interdum pinnatipartita. Pedunculi 1-cephali. Bracteae latae, obtusae. Tubus corollae florae bisexualis supra inflata, lobis reflexis. Fructus non alatus sed saepe margine paulo crasso.

Annual plant, glabrous in all parts excepting within the leaf sheaths, erect or creeping with alternate leaves. Leaves simple or filiform, frequently with some leaves pinnately lobed, with rather long hairs within the leaf sheath. Involucral bracts few in number, broad, obtuse. Marginal flowers with a very reduced corolla or none ; ovary with a wide wing, glabrous or nearly so. Central flowers tubular, much inflated above and well developed, reflexed lobes ; ovary somewhat flattened, with a thickened, rim-like edge but not winged. Fruit of marginal flower winged, that of the central flower with a small thickening along the flattened edge, glabrous or with some bristles on the posterior face.

Common in pools and damp places on the flats. Flowering season principally from July to September but may be found at any time in damp places.

Type. Levyns 6775, Kenilworth Racecourse (Bolus Herbarium).

Additional interest attaches to *C. filifolia* Thunb. in that it has long been recognised as native in Australia as well as in Africa. In view of the fact that two species have been given this name in South Africa it is a matter of some interest to determine which of the two South African species is represented in Australia. Through the kindness of the Director of the National Herbarium at Melbourne, I have been able to examine some specimens collected in Melbourne. They look very much like *C. filifolia* Thunb. in the sense in which it is used here, but there are small differences which may prove to be constant. (Fig 1, *c*.) If so, the Australian plant would have a good claim to be regarded as a distinct species. These differences are :—(1) The presence of some hairs on the stems and peduncles, whereas the African plant is glabrous excepting for a few hairs within the leaf sheath. (2) A relatively shorter corolla which is usually slightly less than the ovary in length. (3) The absence of wings on the ovary of the bisexual flower. It seems likely, therefore, that three species will have to be recognised in place of one, but the Australian problem is one that can only be settled in that country and for the present the recognition of two South African species must suffice.

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